

10/768,370

(FILE 'HOME' ENTERED AT 11:12:53 ON 01 SEP 2004)

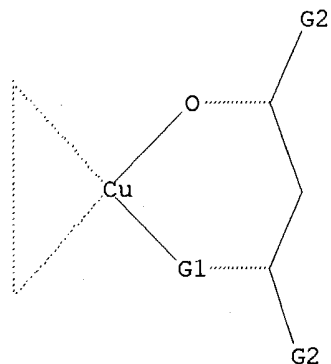
FILE 'REGISTRY' ENTERED AT 11:13:11 ON 01 SEP 2004

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



G1 O,N

G2 Me,Et,n-Pr,i-Pr,Ph,CF3,CCl3,CBr3,MeO,EtO,n-PrO,i-PrO

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 11:13:44 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 607 TO ITERATE

100.0% PROCESSED 607 ITERATIONS

14 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 10662 TO 13618

PROJECTED ANSWERS: 56 TO 504

L2 14 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 11:13:51 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 13013 TO ITERATE

100.0% PROCESSED 13013 ITERATIONS

316 ANSWERS

SEARCH TIME: 00.00.01

L3 316 SEA SSS FUL L1

=> fil caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

155.42

155.63

FILE 'CAPLUS' ENTERED AT 11:13:57 ON 01 SEP 2004

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FILE COVERS 1907 - 1 Sep 2004 VOL 141 ISS 10  
FILE LAST UPDATED: 31 Aug 2004 (20040831/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13

L4 455 L3

=> s 14 and acetylene

61769 ACETYLENE

L5 11 L4 AND ACETYLENE

=> d 1-11 bib abs

L5 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:984244 CAPLUS

DN 140:349537

TI Mono- and bimetallic copper(I)- and silver(I)-phosphine complexes with  $\beta$ -diketonate units

AU Lang, H.; Leschke, M.; Melter, M.; Walfort, B.; Koehler, K.; Schulz, S. E.; Gessner, T.

CS Fakultät fuer Naturwissenschaften, Institut fuer Chemie, Lehrstuhl Anorganische Chemie, Technische Universität Chemnitz, Chemnitz, Germany

SO Zeitschrift fuer Anorganische und Allgemeine Chemie (2003), 629(12-13), 2371-2380

CODEN: ZAACAB; ISSN: 0044-2313

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA German

AB The reaction of  $[(\eta^2\text{-Me}_3\text{SiC.tplbond.CSiMe}_3)\text{CuBr}]_2$  (1) with 2 equivalent of  $[\text{M}(\text{O}-\text{O})]$  [ $\text{M} = \text{Na, Ag}$ ;  $\text{O}-\text{O} = \text{acac}$ , 2a/3a; 1,1,1,5,5,5-hexafluoroacetylacetonate (hfac), 2b/3b; = 2,2,6,6-tetramethyl-3,5-heptanedionate (tehe), 2c/3c; 1,3-diphenyl-1,3-propandionate (dipa), 2d/3d; 2-methyl-4-pyronate (mepy), 2e/3e; troponolate (trop), 2f/3f] affords  $[(\eta^2\text{-Me}_3\text{SiC.tplbond.CSiMe}_3)\text{Cu}(\text{O}-\text{O})]$  (4a, acac; 4b, hfac; 4c, tehe; 4d, dipa; 4e, mepy; 4f, trop), which further reacts with  $\text{PR}_3$  ( $\text{R} = \text{C}_6\text{H}_4\text{CH}_2\text{NMe}_2$ ) (5) to give the phosphane Cu(I)  $\beta$ -diketonato complexes  $[(\text{R}_3\text{P})\text{Cu}(\text{O.intrsec.O})]$  ( $\text{O}-\text{O} = \text{acac}$ , 6a; hfac, 6b; tehe, 6c; dipa, 6d; mepy, 6e; trop, 6f) via replacement of  $\text{Me}_3\text{SiC.tplbond.CSiMe}_3$ . Complexes 6a-6f are also formed, when 5 is reacted with equimolare amts. of  $\text{CuCl}$  (7) and than with  $\text{Na}(\text{O}-\text{O})$  (2). Using the Ag salt  $\text{Ag}_2(\text{O}_2\text{-O}_2)$  ( $\text{O}_2\text{-O}_2 = 1,4\text{-benzochinoate}$  (benz), 9a; = 1,4-anthrachinoate (anth), 9b) instead of 2 or 3, than homobimetallic complexes of type  $[(\text{R}_3\text{P})\text{Cu}(\text{O}_2\text{-O}_2)\text{Cu}(\text{PR}_3)]$  ( $\text{O}_2\text{-O}_2 = \text{benz}$ , 10a; anth, 10b) are accessible in which two copper(I) phosphine building blocks are spanned by the  $\pi$ -conjugated organic bridging unit  $\text{O}_2\text{-O}_2$ . The reaction of 3 with 5 in the ratio of 1:1 produces the phosphine-stabilized Ag(I) complexes

[(R3P)Ag(O-O)] (O-O = acac, 11a; mepy, 11b; trop, 11c). Homobimetallic [(R3P)Ag(O2-O2)Ag2(PR3)] (O2-O2 = benz, 12a; anth, 12b), which is isostructural to 10, is accessible by treatment of 5 with 0.5 equiv of Ag2(O2-O2) (9). While the resp. Cu(I) complexes 6 and 10 are stable in solution and in the solid-state, it appeared that the appropriate Ag(I) complexes 11 and 12 decompose upon precipitation of Ag on their exposure to light.

The application of 4a and 6c as precursors in the CVD process for the deposition of Cu films on TiN-coated SiO2 wafers is discussed. The solid-state structure of 6f is reported. Mononuclear 6f crystallizes together with [(R3P)CuCl] (8) (ratio 6f:8 = 85:15) in the triclinic space group P.hivin.1 with the cell parameters  $a = 8.962(2)$ ,  $b = 10.753(3)$ ,  $c = 17.037(5)$  Å,  $\alpha = 78.29(2)$ ,  $\beta = 77.12(2)$ ,  $\gamma = 81.220(10)$ ,  $V = 1557.3(7)$  Å<sup>3</sup>,  $Z = 2$  with 4703 observed unique reflections ( $R_1 = 0.0661$ ). The Cu(I) ion in 6f possesses the coordination number 4. A boat-like conformation for the 6-membered CuPNCH2C2/Phenyl cycle is found and the troponolate ligand is sym. chelate-bound via both O atoms to the Cu(I) ion.

RE.CNT 77 THERE ARE 77 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:946673 CAPLUS  
DN 140:331256  
TI Synthesis, electronic spectra and solvent-induced reversible dissociation of diphosphine(hexafluoroacetylacetonato)copper(I) complexes  
AU Pawlowski, Valeri; Strasser, Andreas; Vogler, Arnd  
CS Institut fuer Anorganische Chemie, Universitaet Regensburg, Regensburg, D-93040, Germany  
SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (2003), 58(10), 950-954  
CODEN: ZNBSEN; ISSN: 0932-0776  
PB Verlag der Zeitschrift fuer Naturforschung  
DT Journal  
LA English  
AB The complexes CuI(P-P)(hfac) with P-P = 1,2-bis(diphenylphosphino)ethane (diphos), 1,3-bis(diphenylphosphino)propane (prophos), 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl (binap) and hfac = hexafluoroacetylacetonate were synthesized and spectroscopically characterized. In the solid state or in solns. of nonpolar solvents these compds. are yellow owing to a long-wavelength (hfac→P-P) ligand-to-ligand charge transfer absorption. In coordinating solvents such as CH3CN the complexes undergo a reversible dissociation according to the equation: Cu(P-P)(hfac) + nCH3CN .dblharw. [Cu(P-P)(CH3CN)n]+hfac-. While the complexes are not luminescent the ion pairs [Cu(P-P)(CH3CN)n]+hfac- are emissive at 77 K. The cations and the anions show sep. emissions as indicated by the excitation spectra.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:290110 CAPLUS  
DN 139:197572  
TI Excited state properties of bis(trimethylsilyl)acetylenecopper(I) hexafluoroacetylacetonate. Emission and photodissociation induced by metal-to-ligand charge transfer excitation  
AU Kunkely, Horst; Vogler, Arnd  
CS Institut fur Anorganische Chemie, Universitat Regensburg, Regensburg, D-93040, Germany  
SO Inorganic Chemistry Communications (2003), 6(5), 543-545  
CODEN: ICCOFP; ISSN: 1387-7003  
PB Elsevier Science B.V.

DT Journal  
 LA English  
 AB The complex CuI(BTA)(hfac) with BTA = bis(trimethylsilyl)acetylene and hfac = 1,1,1,5,5,5-hexa-fluoroacetylacetonate shows a longest-wavelength absorption at  $\lambda_{\text{max}} = 324 \text{ nm}$  ( $\epsilon = 5400 \text{ M}^{-1} \text{ cm}^{-1}$ ) which is assigned to a spin-allowed CuI  $\pi$  (BTA) metal-to-ligand charge transfer (MLCT) transition. The solid complex displays an emission at  $\lambda_{\text{max}} = 601 \text{ nm}$  which is assumed to originate from the lowest-energy MLCT triplet. In solution MLCT excitation leads to the release of the acetylene with  $6 \times 10^{-4}$  at  $\lambda_{\text{irr}} = 333 \text{ nm}$ .

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:123572 CAPLUS  
 DN 136:192671  
 TI Manufacture of semiconductor device with copper wiring using CVD and light  
 IN Ohtsuka, Nobuyuki; Shimizu, Noriyoshi  
 PA Fujitsu Limited, Japan  
 SO U.S. Pat. Appl. Publ., 10 pp.  
 CODEN: USXXCO

DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002019131	A1	20020214	US 2001-811525	20010320
	US 6746957	B2	20040608		
	JP 2002057126	A2	20020222	JP 2000-242816	20000810
	DE 10120184	A1	20020228	DE 2001-10120184	20010424
PRAI	JP 2000-242816	A	20000810		

AB A method of manufacturing a semiconductor device has the steps of: (a) preparing a semiconductor substrate formed with an insulating layer having a wiring recess and (b) forming a conductive layer by CVD on a surface of the semiconductor substrate including an inner surface of the wiring recess, while lamp light is applied to the semiconductor substrate, the conductive layer being substantially made of Cu. With this method, Cu wiring having a high adhesion force is formed by CVD.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:691626 CAPLUS  
 DN 134:17549  
 TI ( $\eta^2$ -Alkyne) $2\text{CuMe}$  as a Synthetic Tool in the Preparation of Numerous Inorganic and Organic Copper(I) Species  
 AU Frosch, W.; Back, S.; Rheinwald, G.; Koehler, K.; Pritzkow, H.; Lang, H.  
 CS Lehrstuhl Anorg. Chem., Inst. Chem., Technische Universitaet Chemnitz, Chemnitz, D-09111, Germany  
 SO Organometallics (2000), 19(20), 4016-4024  
 CODEN: ORGND7; ISSN: 0276-7333  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 134:17549  
 AB The application of the heterobimetallic tweezer mol.  $\{[\text{Ti}](\text{C.tplbond.CR1})_2\text{CuCH}_3 \{[\text{Ti}] = (\eta^5\text{-C}_5\text{H}_4\text{SiMe}_3)_2\text{Ti}; 1\text{a}, \text{R1} = \text{SiMe}_3; 1\text{b}, \text{R1} = \text{tBu}\}$  as a synthetic tool in the synthesis of  $\{[\text{Ti}](\text{C.tplbond.CSiMe}_3)_2\text{CuOR}_2 \{3\text{a}, \text{R2} = \text{CH}_3; 3\text{b}, \text{R2} = \text{CH}_2\text{CH}_3; 3\text{c}, \text{R2} = \text{tBu}; 3\text{d}, \text{R2} = \text{Ph}; 3\text{e}, \text{R2} = \text{C}_6\text{H}_4\text{tBu-2}; 3\text{f}, \text{R2} = \text{C}_6\text{H}_3(\text{tBu})_2\text{-2,6}\}$ ,

{[Ti](C.tplbond.CSiMe3)2}Cu(acac) (6), {[Ti](C.tplbond.CSiMe3)2}CuSR2 (11a, R2 = C2H5; 11b, R2 = Ph), {[Ti](C.tplbond.CSiMe3)2}CuN(SiMe3)2 (16), {[Ti](C.tplbond.CtBu)2}CuPPh2 (17), {[Ti](C.tplbond.CR1)2}CuC.tplbond.CR3 [R1 = tBu: 19a, R3 = tBu; 19b, R3 = SiMe3; 19c, R3 = (CH2)2CH3; 19d, R3 = H; 19e, R3 = Fc; 19f, R3 = C6H4NO2-4; R1 = SiMe3; 20a, R3 = Ph, 20b, R3 = CO2Me; 20c, R3 = SiMe3; 20d, R3 = Fc; Fc = (η5-C5H4)Fe(η5-C5H5)], and {[Ti](C.tplbond.CtBu)2}CuO2C-C.tplbond.CH (8) and {[Ti](C.tplbond.CtBu)2}CuO2C-C.tplbond.C-Cu{(tBuC.tplbond.C)2[Ti]} (9) is described. In all of these reactions evolution of CH4 is the driving force for the formation of the corresponding complexes 6, 8, 9, 16, 17, 19, and 20. A characteristic feature of the Cu(I) alcoholates 3a-f and the Cu(I) amide 16 is the elimination of Me3SiOR2 (for 3) or N(SiMe3)3 (for 16) to produce the tetranuclear Ti(IV)-Cu(I) acetylide {[Ti](C.tplbond.CSiMe3)(C.tplbond.CCu)}2 (4). The result of the x-ray structure anal. of the Cu acetylides 19a and 19f is reported. These complexes contain a trigonally planar coordinated 16-valence-electron Cu(I) center, comprised of two η2-coordinated tBuC.tplbond.C groups and a η1-bonded C.tplbond.CtBu (19a) or C.tplbond.C-C6H4NO2-4 (19f) entity.

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:210274 CAPLUS  
DN 132:244841  
TI Copper source precursors and method for chemical vapor deposition of copper-based films  
IN Kaloyeros, Alain E.; Arkles, Barry C.  
PA Gelest, Inc., USA; The Research Foundation of State University of New York  
SO PCT Int. Appl., 50 pp.  
CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000017278	A1	20000330	WO 1999-US20535	19990908
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6037001	A	20000314	US 1998-157236	19980918
	US 6066196	A	20000523	US 1998-157901	19980921
	AU 9959123	A1	20000410	AU 1999-59123	19990908
	DE 19983591	T	20010816	DE 1999-19983591	19990908
	JP 2002526651	T2	20020820	JP 2000-574181	19990908
PRAI	US 1998-157236	A	19980918		
	US 1998-157901	A	19980921		
	WO 1999-US20535	W	19990908		

OS MARPAT 132:244841

AB The precursor includes a mixture of ≥1 ligand-stabilized Cu(I) β-diketonate precursor and ≥1 Cu(II) β-diketonate precursor. The method includes introducing into a deposition chamber: (i) a substrate; (ii) a Cu source precursor in a vapor state including a mixture of ≥1 ligand-stabilized Cu(I) β-diketonate precursor and ≥1 Cu(II) β-diketonate precursor; and (iii) ≥1 transport gas, different from the Cu source precursor. The reaction

substrate temperature is maintained at .apprx.50-500° for a period of time sufficient to deposit a Cu-based film on the substrate.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:169322 CAPLUS  
DN 132:215703  
TI Chemical vapor deposition of copper-based films  
IN Kaloyeros, Alain E.; Arkles, Barry C.  
PA Gelest, Inc., USA; The Research Foundation of State University of New York  
SO U.S., 24 pp.  
CODEN: USXXAM

DT Patent  
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6037001	A	20000314	US 1998-157236	19980918
	US 6066196	A	20000523	US 1998-157901	19980921
	WO 2000017278	A1	20000330	WO 1999-US20535	19990908
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9959123	A1	20000410	AU 1999-59123	19990908
	DE 19983591	T	20010816	DE 1999-19983591	19990908
	JP 2002526651	T2	20020820	JP 2000-574181	19990908
PRAI	US 1998-157236	A1	19980918		
	US 1998-157901	A	19980921		
	WO 1999-US20535	W	19990908		
AB	A method for depositing Cu-based films and a Cu source precursor for use in the CVD of Cu-based films are provided. The precursor includes a mixture of $\geq 1$ ligand-stabilized Cu(I) $\beta$ -diketonate precursor and $\geq 1$ Cu(II) $\beta$ -diketonate precursor. The method includes introducing into a deposition chamber: (i) a substrate; (ii) a Cu source precursor in a vapor state including a mixture of $\geq 1$ ligand-stabilized Cu(I) $\beta$ -diketonate precursor and $\geq 1$ Cu(II) $\beta$ -diketonate precursor; and (iii) $\geq 1$ transport gas, different from the Cu source precursor. The reaction substrate temperature is maintained at .apprx.50-500° for a period of time sufficient to deposit a Cu-based film on the substrate.				

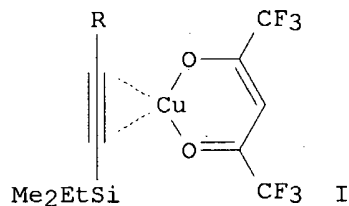
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1996:331032 CAPLUS  
DN 125:142900  
TI Alkyne complexes of copper(I) (1,1,1,5,5,5-hexafluoro-2,4-pentanedionato): syntheses and characterization of ( $\eta^2$ -bis(trimethylsilyl)acetylene) copper(I) (hfac), ( $\mu$ - $\eta^2$ -bis(trimethylsilyl)acetylene) bis(copper(I) (hfac)) and a series of ( $\eta^2$ -alkyne) Cu(hfac) complexes  
AU Doppelt, Pascal; Baum, Thomas H.  
CS IBM Almaden Research Center, 650 Harry Road, San Jose, CA, 95120-6099, USA  
SO Journal of Organometallic Chemistry (1996), 517(1-2), 53-62  
CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier  
 DT Journal  
 LA English  
 AB The reaction of Cu<sub>2</sub>O with 1,1,1,5,5,5-hexafluoro-2,4-pentanedione (Hhfac) in the presence of alkynes gave (η<sup>2</sup>-alkyne)Cu(hfac). When using bis(trimethylsilyl)acetylene (BTMSA), both a mononuclear compound BTMSACu(hfac) (1) and a dinuclear complex BTMSA(Cu(hfac))<sub>2</sub> (2) can be isolated; each complex was characterized by x-ray crystallog., IR, <sup>1</sup>H and <sup>13</sup>C NMR spectroscopies. In 1, the BTMSA ligand is η<sup>2</sup> bonded parallel to the Cu (β-diketonate) plane, the trimethylsilyl groups are cis bent away from Cu with small angles of deformation (θCCSi = 157 and 171°) and the C.tplbond.C bond distance is 1.17 Å. In 2, two BTMSACu(hfac) planes with a dihedral angle of 105.8° are observed. The intramol. Cu-Cu distance is only 2.800 Å and the central axis of BTMSA is situated perpendicular to the Cu-Cu vector.

L5 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1995:890562 CAPLUS  
 DN 124:133010  
 TI Organic copper compounds for formation of copper films by metalorganic chemical vapor deposition  
 IN Uchida, Hiroto; Sai, Atsushi; Sato, Masamitsu; Saito, Noryasu; Ogi, Katsumi  
 PA Mitsubishi Materials Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07215982	A2	19950815	JP 1994-225168	19940920
	JP 3284779	B2	20020520		
PRAI	JP 1993-233934	A	19930920		
OS	MARPAT 124:133010				
GI					



AB The compds. consist of liquid and pyrolyzable I (R = H, or lower alkyl). The compds have excellent thermal stability and yield Cu films at stable vaporization rate.

L5 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:570641 CAPLUS  
 DN 119:170641  
 TI CVD of copper from (β-diketonate)Cu<sub>n</sub> copper(I) precursors  
 AU Chi, Kai Ming; Jain, A.; Hampden-Smith, M. J.; Kudas, T. T.  
 CS Dep. Chem., Univ. New Mexico, Albuquerque, NM, 87131, USA  
 SO Materials Research Society Symposium Proceedings (1992), 260 (Advanced Metallization and Processing for Semiconductor Devices and Circuits-II), 629-4  
 CODEN: MRSPDH; ISSN: 0272-9172

DT Journal  
LA English  
AB Selective CVD of Cu is the focus of recent research interest as a result of possible applications as vertical interconnect material in multilevel metalization. A variety of Cu(I) and Cu(II) compds. have been used to deposit Cu. In some cases, the compds. selectively deposit Cu on various different surfaces. However, the origin of this selectivity is not unambiguously established at this stage. To derive a better understanding of the CVD processes, Cu(I) compds. ( $\beta$ -diketonate)CuLn were synthesized and used as CVD precursors. The new species (fod)CuL, where fod = 2,2-dimethyl-6,6,7,7,8,8,8-heptafluoro-3,5-octanedionate and L = PMe<sub>3</sub>, 1,5-cyclooctadiene, 2-butyne, bis(trimethylsilyl)**acetylene** and vinyltrimethylsilane are described. The CVD of Cu and factors affecting selective Cu deposition are discussed here.

L5 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1991:632395 CAPLUS  
DN 115:232395  
TI Synthesis and characterization of ( $\beta$ -diketonato)copper(I) alkyne complexes: structural characterization of (hexafluoroacetylacetonato)(diphenylacetylene)copper(I)  
AU Chi, K. M.; Shin, H. K.; Hampden-Smith, M. J.; Kodas, T. T.; Duesler, E. N.  
CS Cent. Micro-Eng. Ceram., Univ. New Mexico, Albuquerque, NM, 87131, USA  
SO Inorganic Chemistry (1991), 30(23), 4293-4  
CODEN: INOCAJ; ISSN: 0020-1669  
DT Journal  
LA English  
OS CASREACT 115:232395  
AB (Hfac)Cu(alkyne) [hfac = hexafluoroacetylacetonato, alkyne = bis(trimethylsilyl)**acetylene**, diphenylacetylene (DPA), 2-butyne] were prepared by the reaction of Na(hfac) with CuCl in the presence of an excess of alkyne. These compds. are volatile and can be sublimed at low temps. Mass spectral data are consistent with a monomeric structure for these species, which was confirmed for (hfac)Cu(DPA) by a single crystal x-ray diffraction study. The central copper atom possesses an approx. trigonal planar coordination environment with co-planar Cu- $\beta$ -diketonate and Cu-alkyne ligands.